



Visionaries 2016

The 21st-century Industrial Revolution

— Creation of New Value through Open Innovation —

Chris Anderson, former editor of *WIRED* magazine and now CEO of 3D Robotics, presented a special lecture at the Hitachi SOCIAL INNOVATION FORUM 2015 –TOKYO– held in October 2015. Author of worldwide bestsellers, *The Long Tail*, *Free*, and *Makers*, Mr. Anderson is known for having proposed some of the key concepts for making sense of the web era. An extract from the lecture, this article looks at what is happening right now in the manufacturing industry and what companies should be doing in response, and presents a unique perspective that offers insights into the true nature of open innovation.

Historic Significance of the Three Industrial Revolutions

I have used the term maker movement to describe the third industrial revolution in which technology is driving a new model of innovation in manufacturing.

The first industrial revolution replaced muscle power with machine power, and in doing so achieved a three-to-fourfold boost in productivity. This led to the birth of the modern city as people

began to cluster around factories. The low-cost production this made possible brought with it a better quality of life.

In the second industrial revolution, it was brain power that was replaced by machines. This involved the “democratization of computers,” with “desktop” and “personal” being key words. However, this was not yet enough, and the missing piece was the democratization of tools for distributing information. This was achieved in 1995 with



the emergence of the World Wide Web (WWW) as a new concept. Whereas past technologies such as printing presses and the means of distribution have been the preserve of major corporations only, it is now possible to make information available to any number of people simply by clicking on a button in a browser.

The key words for the third industrial revolution are “mechanical” and “digital,” symbolized by three-dimensional (3D) printers and cloud manu-

facturing. The practice of collaborating with other people on the web to build something by oneself is growing, with tools for manufacturing spreading to schools and the home. In other words, it is now possible to build physical objects for yourself.

2007 as a Turning Point

2007 was the year the maker movement really got started, with the release of a groundbreaking robot development kit and new home game consoles. It was also the beginning of the explosive growth in smartphones that continues to this day, and the year in which I began developing unmanned aerial vehicles. I was able to use the web to obtain the knowledge I needed to build them using toy blocks. This ability to use toys to build a flying robot felt to me like a major turning point in history. I went on to form an online community called DIY Drones and established 3D Robotics with a young colleague I met there. I chose him as my collaborator because of his extensive knowledge of factories.

The continued evolution of robots in the future will leave two paths open for human beings: you either program the robots, or you take out the trash. Humans will need to exhibit their creativity. On the other hand, things like access to skills or working through a community have become easier, making it possible to work as a team in which each participant contributes what they do best.

Answer to be Found in Open Innovation

While the economist Ronald Coase stated that the purpose of the company is to minimize transaction costs, that model of the company clearly belongs to the 20th century. In contrast, Bill Joy, co-founder of Sun Microsystems, said that, “No matter who you are, most of the smartest people work for someone else.” The answer to this paradox is to be found in open innovation. If you create a platform or community, it will naturally attract talented people from around the world. Having already shifted from company-versus-company to product-versus-product, the nature of competition in the 21st century will be about ecosystem-versus-ecosystem, making it a battle between platforms. This phenomenon can be seen in the competition between major social networks taking place on the web. To own a platform or to participate in one: we need to look at these as the two pathways to success. It seems likely that such an era will give rise to corporate practices that allow others to be successful on the corporation’s own platform.



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